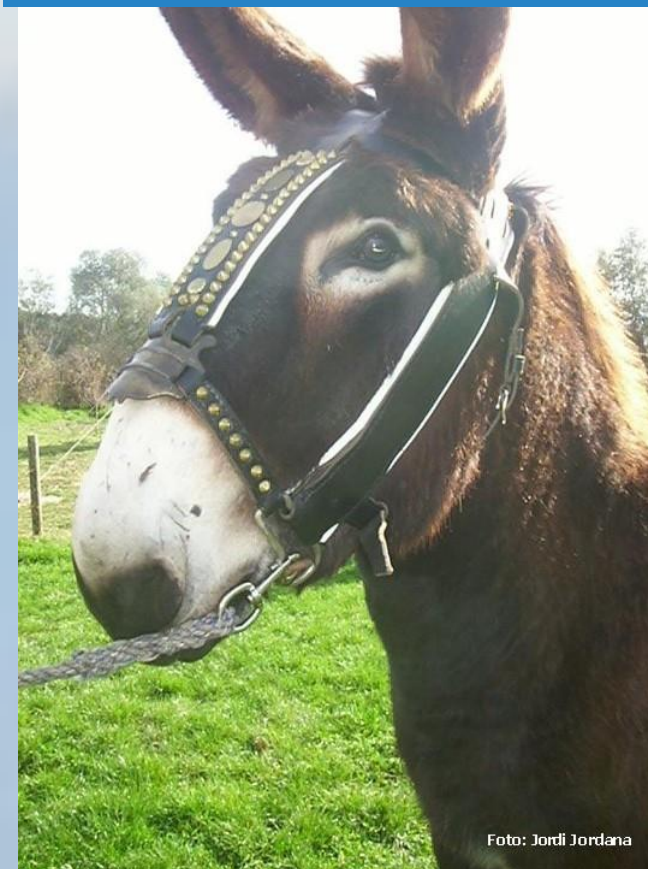


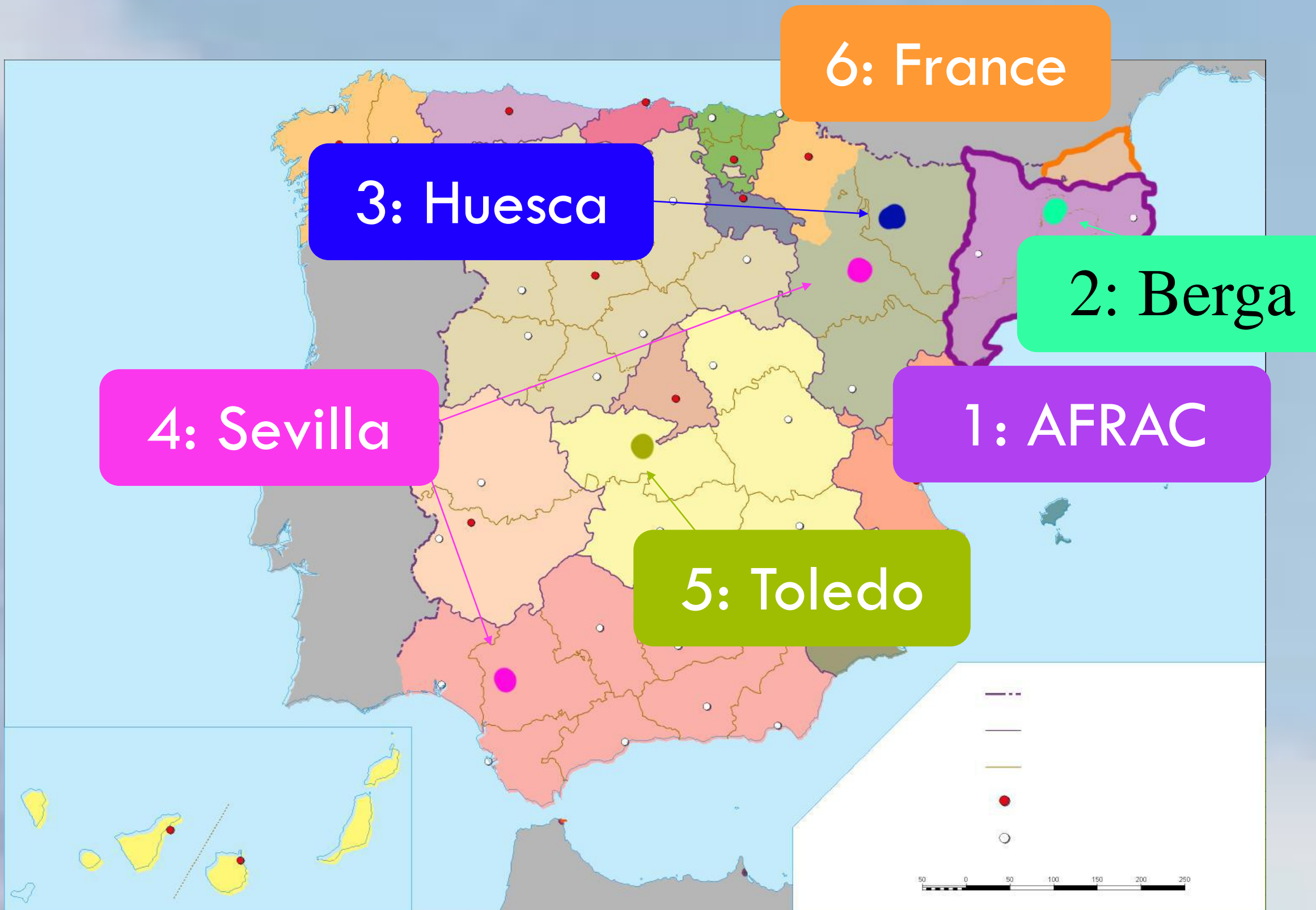
Evolution of the demographic, reproductive and genetic parameters of the Catalan donkey breed from its genealogical book information

Cristina Sebastià Navarro

Introduction



The Catalan donkey breed is one of the six Spanish donkey breeds, and it has been endangered since the Spanish Civil War (1936-1939). For that reason in 1978 was reopened the studbook, and in 1995 was created the breed conservation program. There are six Catalan donkey subpopulations distributed as shown in the map:



Material and methods

The population studied consists in 1599 animals (916 females), 800 of them are alive (517 females).

ENDOG 4.9 program was used to compute the parameters of the right table:

Objectives

To study and compare with historical data the following parameters:

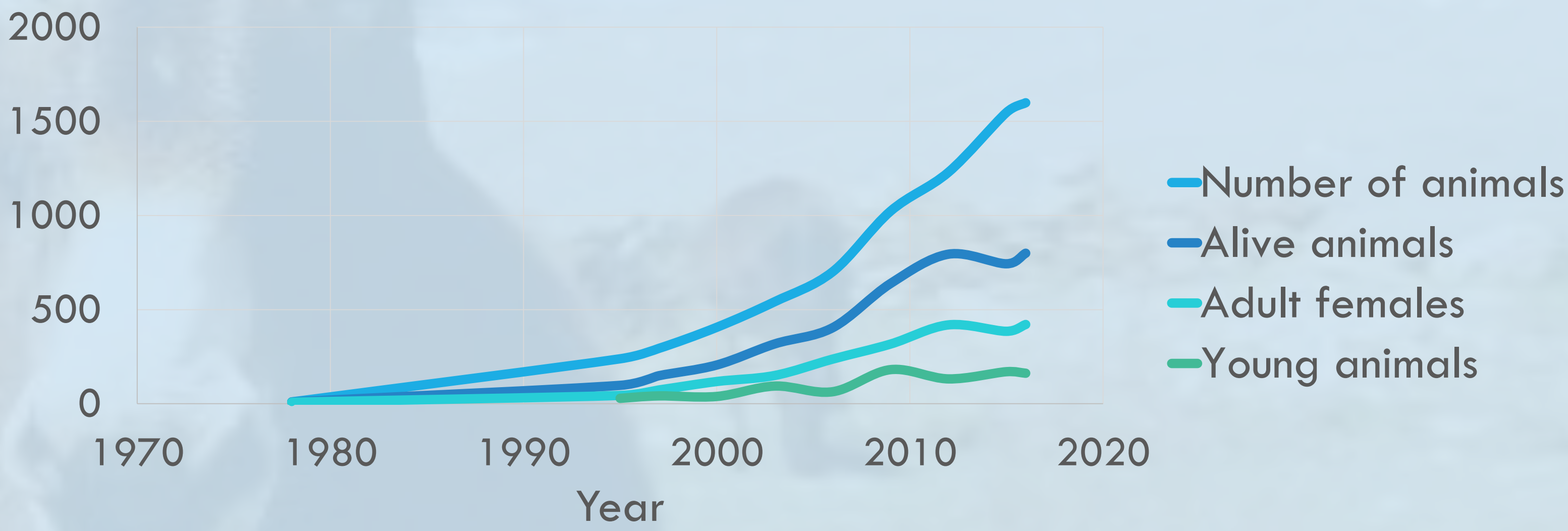
Reproductive parameters	Genetic parameters	Demographic parameters
Base population, reference population, founders, ancestors Generation intervals	Inbreeding and average relatedness Generations Effective size of population	Subpopulations Nei's distance

Results and discussion

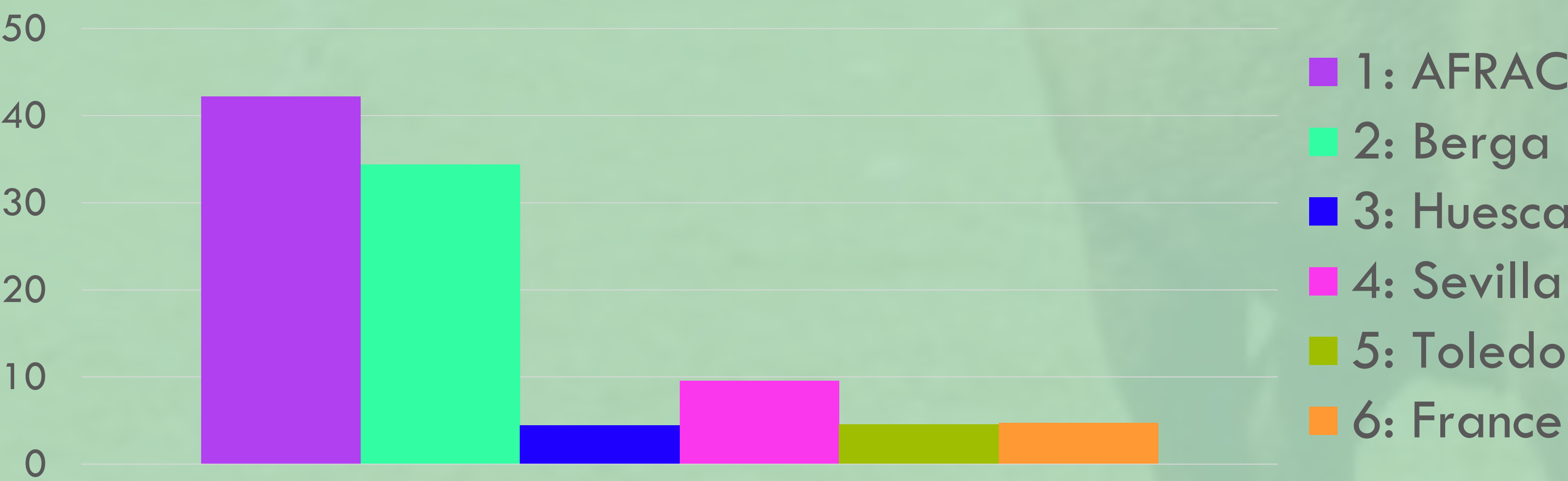
Catalan donkey in numbers

Base population	289 animals
Reference population	1310 animals
Founders (effective founders)	217 animals (71)
Ancestors (effective ancestors)	202 animals (39)
Effective size of population	87,46 animals
Generation intervals	7,47 \pm 0,13 years
Average generations	6,55 generations

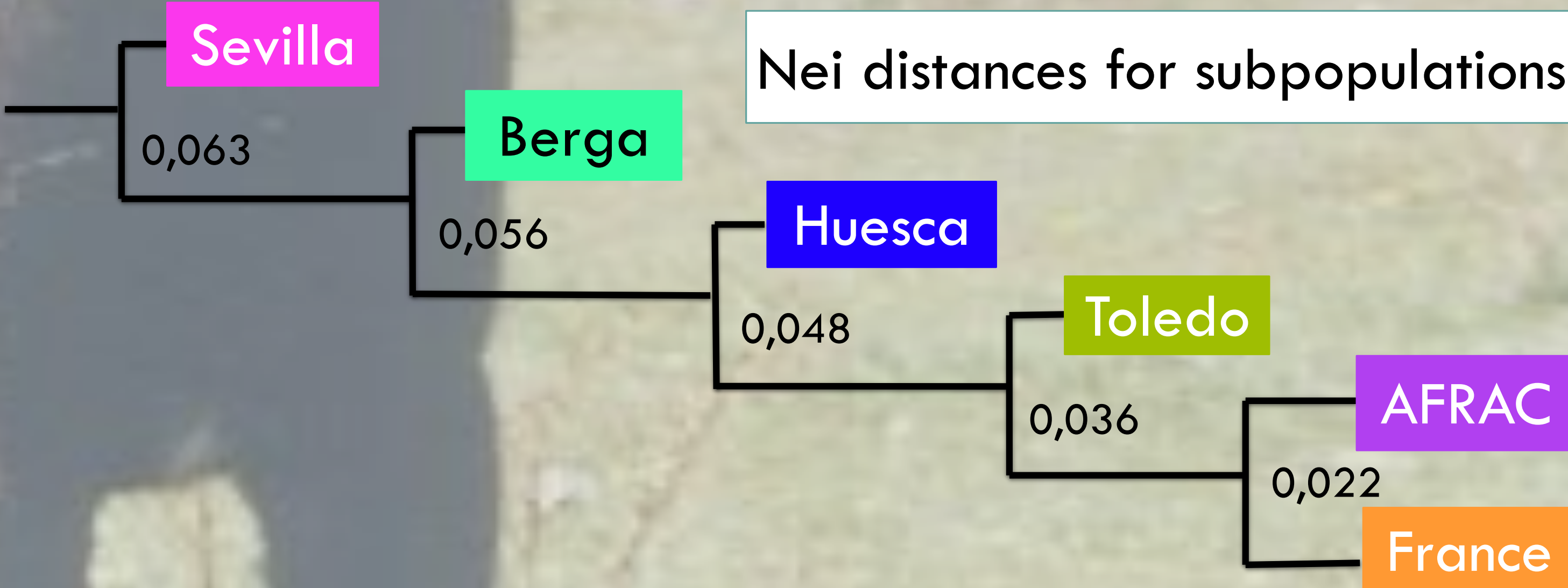
Population evolution



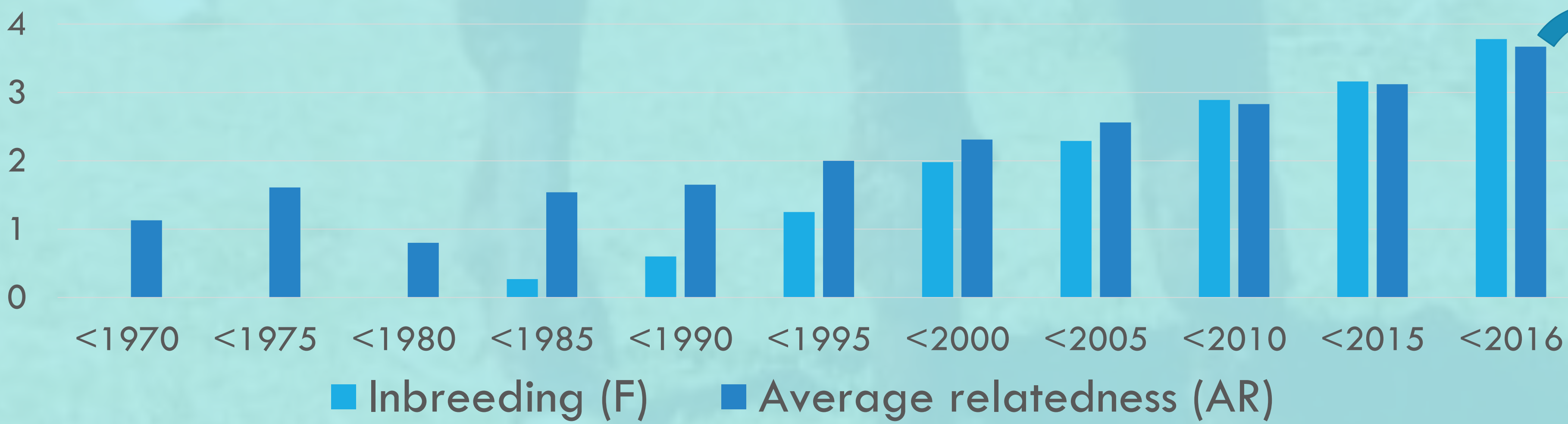
Subpopulation % of representation in total population



Nei distances for subpopulations



Inbreeding and average relatedness (%) evolution



Nowadays:
F: 3,78%
AR: 3,67%

Conclusions

- Catalan donkey breed is endangered, but its situation has improved a lot since 1970s.
- Inbreeding and average relatedness have increased: it is important to plan favorable matings to reduce them.
- The most important subpopulations are AFRAC and Berga: they have to take care of their genetic variability in order to maintain the breed diversity.



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- Marmi J, Goyache F, Gutiérrez J, Jordana J. 2005. Análisis de la variabilidad genética de la raza asnal catalana a partir de su información genealógica. ITEA Extra nº26:102-104.